

Claims

- [c1] 1. A voltage divider circuit coupled to a power source having a source voltage and a ground, comprising:
a first transistor including a gate electrode having an area, a source, and a drain; and
a second transistor including a gate electrode having an area, a source, and a drain, wherein said second transistor gate electrode is joined with said first transistor source and said first transistor drain;
wherein said first transistor gate electrode area and said second transistor gate electrode area differ by a margin greater than a typical manufacturing tolerance for transistor gate electrode areas.
- [c2] 2. A voltage divider circuit according to claim 1, wherein the power source is joined with said first transistor gate electrode
- [c3] 3. A voltage divider circuit according to claim 1, wherein said first and second transistor gate electrode areas are selected to provide a desired division of the source voltage.
- [c4] 4. A voltage divider circuit according to claim 1, wherein

said first transistor and said second transistor are arranged in series.

[c5] 5. A voltage divider circuit according to claim 1, wherein said second transistor source and drain are joined with the ground.

[c6] 6. A voltage divider circuit according to claim 1, wherein the voltage divider circuit does not include any resistors.

[c7] 7. A voltage divider circuit coupled to a power source having a source voltage and a ground, comprising:
a first transistor including a gate electrode having an area, a source, and a drain; and
a second transistor including a gate electrode having an area, a source, and a drain, wherein said second transistor gate electrode is joined with said first transistor source and said first transistor drain;
wherein said first transistor gate electrode area and said second transistor gate electrode area differ by a margin greater than a typical manufacturing tolerance for transistor gate electrode areas, said first and second transistor gate electrode areas being selected to provide a desired division of the source voltage.

[c8] 8. A voltage divider circuit according to claim 7, wherein the power source is joined with said first transistor gate

electrode.

- [c9] 9. A voltage divider circuit according to claim 7, wherein said first transistor and said second transistor are arranged in series.
- [c10] 10. A voltage divider circuit according to claim 7, wherein said second transistor source and drain are joined with the ground.
- [c11] 11. A voltage divider circuit according to claim 7, wherein the voltage divider circuit does not include any resistors.
- [c12] 12. A method of dividing a power source voltage comprising the steps of:
providing a voltage divider circuit having a first transistor including a first transistor gate electrode having a first transistor gate electrode area and a second transistor including a second transistor gate electrode having a second transistor gate electrode area;
applying the power source voltage to said voltage divider circuit; and
dividing the power source voltage according to the ratio of said first transistor gate electrode area to said second transistor gate electrode area.
- [c13] 13. A method according to claim 12, wherein said first

transistor further comprises a drain and a source, each connected to said second transistor gate electrode

[c14] 14. A method according to claim 12, wherein said power source voltage is joined with said first transistor gate electrode.

[c15] 15. A method according to claim 12, wherein said first transistor and said second transistor are arranged in series.

[c16] 16. A voltage divider circuit coupled to a power source having a power source voltage and a ground, comprising:

a plurality of transistors, each including a gate electrode having a gate electrode area, a source, and a drain;
wherein said source and drain of each of said plurality of transistors is joined with said gate electrode of another of said plurality of transistors, and said gate electrode areas are equal.

[c17] 17. A voltage divider circuit according to claim 16, wherein said plurality of transistors are arranged in series.

[c18] 18. A voltage divider circuit according to claim 17, wherein said plurality of transistors arranged in a series includes a first transistor having a first transistor gate

electrode joined with the power source.

[c19] 19. A voltage divider circuit according to claim 16, wherein said plurality of transistors arranged in a series includes a last transistor having a last source and drain joined with the ground.

[c20] 20. A method of designing a circuit for dividing voltage, comprising the steps of:
providing a first transistor including a gate electrode having an area, a source, and a drain; and
providing a second transistor including a gate electrode having an area, a source, and a drain;
selecting said first transistor gate electrode area and said second transistor gate electrode area according to a predetermined ratio between the areas to provide a desired voltage division; and
joining said second transistor gate electrode with said first transistor source and said first transistor drain.